

- 2. Cheeks and face yellow, frontal callosity of female yellow with a narrow fuscous upper border.....3
- Cheeks and face black, yellow in the middle, frontal callosity of female black.....4
- 3. Wing picture and hyaline areas contrasting, cell R with one-fourth or more of the apex hyaline.....*coloradensis* Bigot
- Wings with luteofuscous pictures and luteous or subhyaline intervals, cell R infuscated to the apex.....*luteopennis* n. sp.
- 4. Fore coxae yellow, rarely with dark brownish streaks; cell R crossed by hyaline apically, the cross-band crosses Cell Cu₁ but does not reach posterior margin*furcatus* Walk.
- Fore coxae entirely jet black; cell R infuscated its entire length, cross-band extends down cell M₃ to margin but does not cross vein Cu₁.....*proclivis* O. S. (5)
- 5. Face narrowly yellow in the middle; a black spot present in the yellow on either side of the second abdominal segment; usually less than 8 mm.....6
- Face broadly yellow over practically the whole intersutural space; second abdominal segment without lateral spots; over 8 mm. in length.....*imfurcatus* n. var.
- 6. Abdomen black, lateral dark spots on the second segment merged with the median spot, leaving only a small yellow notch in front, black on following segments not indented behind although posterior margins are narrowly yellow.....*piceus* n. var.
- Abdomen with lateral spots on the second segment isolated, black on the third segment indented or divided in the middle....var. *surdus* O. S.

The writer is indebted to the following persons for the opportunity of studying specimens included in this paper: Messrs. Eric Hearle, J. Wilcox, R. Latta, E. E. Wehr; Professors G. A. Mail, H. A. Scullen, G. F. Ferris, L. P. Wherle, G. F. Knowlton, G. M. List, C. E. Mickel, and Dr. Alan Stone; also Mr. Nathan Banks of the Museum of Comparative Zoology, Dr. C. H. Curran of the American Museum of Natural History, and Mr. E. S. Thomas of Ohio State Museum. Major E. E. Austen, of the British Museum, kindly compared *C. atricornis* Big.

THE TEXAS CITRUS MITE, A NEW SPECIES.

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During recent months the writer has received several consignments of a pytophagous mite from citrus in Texas. Critical study of the material has convinced the writer that it represents a new species, and it is therefore described below.

Anychus clarki, new species.

Female.—Color, in nicely preserved specimens, lemon amber; the deeper coloration, due to confluent blotches, a deep chocolate brown, occurs around the margin of the body, but is lacking anteriorly and medially. Eyes in preserved material translucent. The dorsal epidermal appendages are 26 in number; of these, the marginal appendages (16) are rod-like, non-tapering, and arise from inconspicuous tubercles; the strictly dorsal appendages (10) are short and spatulate and do not appear to arise from tubercles. The appendages are distributed as follows: One overlying each outer margin of the palpi anteriorly, one laterad of each eye, one on each lateral margin of cephalothorax just ahead of abdomino-thoracic suture, two marginally on each side of abdomen, four along hind margin of abdomen, and a submarginal pair associated with the latter (these all rodlike); one mediad of each eye, one three-fourths distance from each eye to abdominal suture, a median pair at hind margin of cephalothorax, a submedian pair a short distance behind the latter, and a median pair midway between cephalothorax and hind end of abdomen (these all spatulate). All dorsal appendages are clothed with minute hairs. Body of female ovate, widest across hind portion of cephalothorax, mature individuals distinctly obese; cephalothorax anteriorly with a slightly concave margin (overlying palpi); male much smaller than female, inversely pyriform, legs proportionately much longer. Measurements of a series of individuals of this sex from citrus, Weslaco, Texas, averaged as follows: Length, 0.376 mm.; width, 0.300. Mandibular plate notched anteriorly, but emargination obscured by a protuberance which overlies it. "Thumb" of palpus subconical in profile, being much thicker at base than at tip, which bears a long narrow "finger" fully three times as long as thick; on dorsal surface of "thumb," distad of its mid-point, arise two fleshy nail-like appendages, in length equalling or exceeding that of terminal "finger"; also on the dorsal surface of the "thumb," one-fourth of its length from the base, arises a blunt dorsal sensilla with papilliform surface; between the latter and the base of the "thumb" arise another fleshy nail-like appendage and a slender bristle; near the center of the outer surface of the "thumb" arises a spindle-shaped hispidulous appendage. Collar trachea extending inward as a long, narrow tube, ending in a subrectangular chamber of enlarged calibre. Forelegs of female in length equalling that of body to tip of mandibular plate. Femur three and a half times as long as thick, less than half again as long as tarsus. Tibia barely exceeding the patella, which is about one and a half times the length of the trochanter. Relative length of joints of leg as follows: Coxa, 24; trochanter, 13; femur, 36; patella, 20; tibia, 21; tarsus, 26. Onychium of tarsus devoid of claws or central vestigial protuberance, its distal extremity merely produced into a rounded gibba; usual four capitate (tenent) hairs arising in pairs from sides of onychium. Egg somewhat flattened, and without an apical stalk.¹

Male.—Color pale, fully one-fourth again as long as wide. Length, 0.254 mm.; width, 0.205 mm. Compared with the female, the pyriform body is much smaller, and the legs much longer. The tubercled spur on the dorsal surface of the palpus, so characteristic of red spider males, is lacking in this species. The

¹According to S. W. Clark, Station Entomologist at Weslaco, Texas.

inner portion of the penis is difficult to observe, but the inner lobe appears to be slender and rodlike, and seems to expand abruptly to form the acutish basilar lobe; the main shaft arises as a stout structure nearly twice the thickness of the inner lobe, but distally is abruptly narrowed and bent upward and forward to terminate in an acuminate point; the terminal arm of the hook forms an angle of 130° with the main axis of the shaft.

Type slide.—Cat. No. 1143, U. S. N. M.

The type material from Weslaco, Texas, January 4, 1935, on citrus. Collected by S. W. Clark. Intermediate between *A. banksi* McG. and *A. rusti* McG., from which two species it may be distinguished as follows:

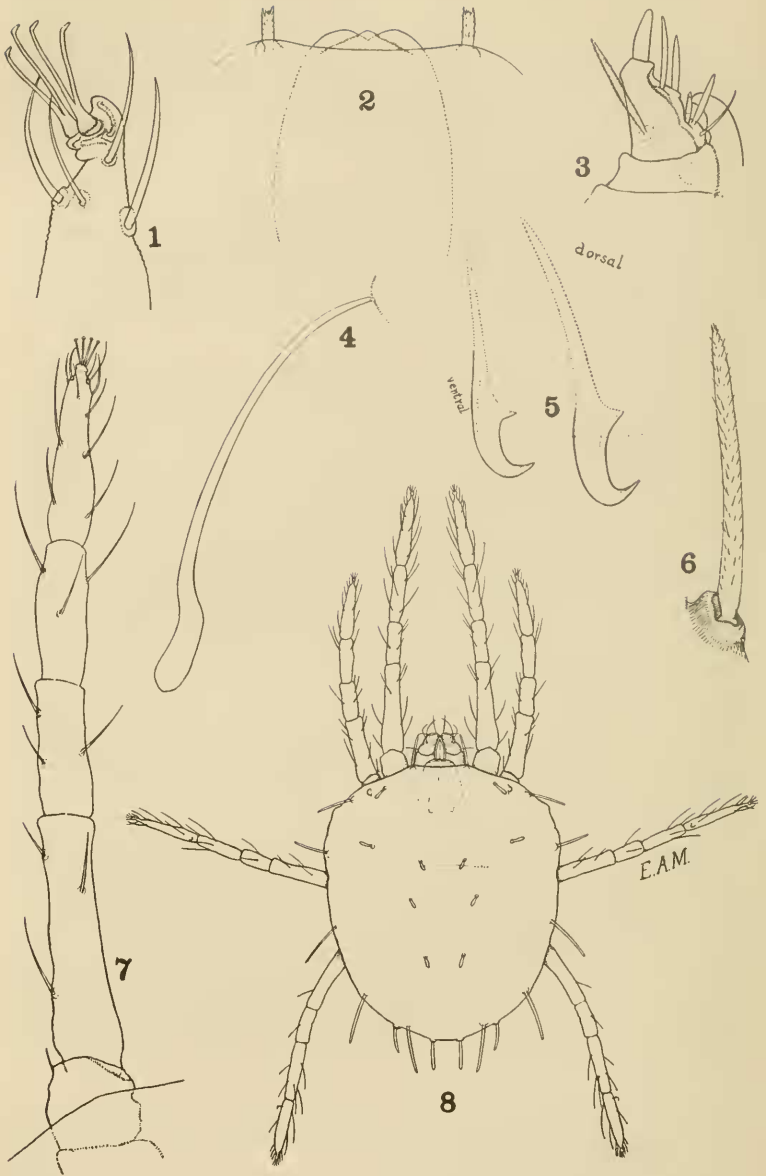
A. banksi: Body widest across middle of cephalothorax; 18 spatulate-serrate hairs comprising the dorsal series of epidermal appendages; transverse suture, separating cephalothorax from abdomen (in female), lying between fourth and fifth dorsal setae—counting from anterior end; palpal “thumb” with a single terminal “finger” on its very narrow apical end; a hair-like appendage arising below center of outer surface of “thumb”; mandibular plate distinctly emarginate; tarsal onychium developed terminally into a rather sharp, hooked point, the capitate hairs arising from a vestigial protuberance.

A. rusti: Body widest across anterior region of abdomen; 26 rod-like slightly serrate hairs comprising the dorsal series of epidermal appendages; transverse suture, separating cephalothorax from abdomen (in female), lying between third and fourth dorsal setae—counting from anterior end; palpal “thumb” with three subterminal “fingers” on its not greatly narrowed apical end; a hair-like appendage arising below center of outer surface of “thumb”; mandibular plate not clearly emarginate; tarsal onychium developed terminally into a rounded protuberance which in profile appears oblongish, but without central vestigial protuberance.

A. clarki: Body widest across posterior region of cephalothorax; 16 rod-like and 10 short spatulate setae comprising dorsal series of epidermal appendages; transverse suture, separating cephalothorax from abdomen (in female), situated much as in *A. banksi*; palpal “thumb” with a single terminal “finger” on its narrow apical end; a spindle-shaped hispidulous seta arising below center of outer surface of “thumb”; anterior emargination of mandibular plate obscured by overlying protuberance; tarsal onychium developed terminally into a rounded protuberance which in profile appears semicircular, without central vestigial protuberance (see description of collar trachea and penis, and distribution of dorsal setae).

Notes.—Mr. S. W. Clark, Entomologist at the Texas Experiment Station at Weslaco, writes that—

“This mite . . . occurs all over the Lower Rio Grande Valley citrus area, . . . and we have had difficulty with it . . . for over seven years. I believe I would be safe in



saying that (this species) is the mite of most economic importance in this section. The color ranges from tan to greenish-brown in some specimens. Newly hatched mites are lemon yellow. When disturbed they travel over the surface of the leaf quite fast. I have noticed practically no webbing. (It feeds chiefly, if not altogether, on the upper side of the leaves . . . and causes them to turn yellowish and drop. The resulting damage is serious . . . and one or two treatments are generally applied for control. Usually sulfur dust is used, and it does the job well. Normally this mite is most abundant in the fall . . . (appearing) first about September, although in case we have no protracted cold periods it will carry up into the spring.”

Mr. Clark states that the California citrus mite (*Paratetranychus citri* McG.) occurs sparingly in Texas.

Mr. A. F. Swain called the writer's attention to this mite. He said that it had been going under the name of the California citrus red spider (*Paratetranychus citri* McG.), but that his familiarity with the California mite caused him, during a visit to Texas groves, to believe that the mite common on citrus in Texas was a distinct species. Mr. Swain advised Mr. Clark to send specimens of the Texas mite to the present writer, which he did, and a careful study of the material has convinced the writer that it represents a new and undescribed species.

EXPLANATION OF PLATE.

Anychus clarki.

- Fig. 1. Tip of tarsus showing appendages (viewed laterally).
- 2. Mandibular plate and anterior margin of cephalothorax.
- 3. Distal portion of palpus with "thumb" and its appendages (viewed laterally).
- 4. Collar trachea.
- 5. The penes of two individuals (viewed laterally).
- 6. One of the marginal setae of the body, with basal tubercle.
- 7. Foreleg (viewed from above).
- 8. Dorsal view of female.

BRACHYMERIA CARINATIFRONS, NEW SPECIES (HYMENOPTERA: CHALCIDIDAE).

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This form is extremely close to *Brachymeria compsiluræ* (Crawford) and may be merely a geographical or climatic race of that species. The specimens at hand may be distinguished from *compsiluræ*, however, by the fact that the middle tibiae